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ular arrangement. Mr. Stodder used Tolles $\frac{1}{10}$ with Prof. Smith's opaque illuminator and Tolles $\frac{1}{18}$ immersion, and he is convinced that some parts of the valves are smooth, transparent, and structureless, without a trace of spherules.

NOTES.

We print in this number the proceedings of the first meeting of the Agassiz Natural History Club, organized by the students of the Anderson School of Natural History at Penikese Island. The school was, notwithstanding the unfinished state of the buildings, and many other temporary drawbacks, resulting from its isolated situations, opened on the 8th of July, fifty students being present. As we go to press the indications are that the need of such a school has been fully demonstrated, and its future success thoroughly assured. The nature of the work already done is such as will tend to make each student an original investigator. A large proportion of the members are teachers. They are learning the art of observing for themselves, gaining an insight into the modes and difficulties of research and obtaining some idea of the vast extent of the field of biology. Even after the short term of ten weeks they will return to their schools and colleges with a new enthusiasm for science-teaching, which will inevitably, if we mistake not, be shown in the other studies they may have to teach.

Though the school, at the time of writing this note, has been running but a fortnight, lectures on surface geology, the embryology of vertebrates and articulates, on physiology, physical geography, on the microscope and its construction, with practical lessons in its use, free hand drawing on the blackboard, zoological and landscape drawing, and daily dredging excursions in the yacht "Sprite," together with instructions in collecting and preserving animals, have been given. The amount of laboratory work done is most satisfactory. Large aquaria are being set up in the temporary laboratory, while the walls for the second dormitory and laboratory are going up.

Certainly the most sanguine friends of the movement have every reason to congratulate the founder and director of the school, with those associated in the work of teaching, on the good prospects of the experiment.

Proceedings of the Agassiz Natural History Club.—The first meeting of the club was held July 24, 1873. President S. F. Whitney in the chair.

Professor Agassiz, having been invited by the President to favor the club with remarks and advice concerning the best methods of work, responded very pleasantly.

Mr. E. C. Crosby read a short paper upon the genus *Bufo*. The eggs of two specimens examined numbered 8840 and 2200 respectively, counted under a lens magnifying four times. All appeared black to the naked eye, but the lens showed half of them to be ashy-brown. With a power of 75 diameters, the eggs were seen to be spherical in shape and of various sizes; the interior of each of a lighter color than its exterior. The stomach of one toad contained eight orthopterous (Locustariæ and Gryllidæ) insects and fifty-three Amphipod crustaceans with much dead grass-like matter. Some of the crustaceans were alive and moving in the stomach. The intestine and the oviduct were each sixteen inches in length. Reference was also made to the great comparative size of the femoral muscles in this genus.

Mr. C. S. Minot said he also had noticed that in toads caught near the beach, the stomach was filled with *Gammarus ornatus*. In two specimens caught early in the morning the sand-fleas in the anterior part of the stomach were still alive; in others caught just before noon they were all dead. He had also observed that in all the toads killed by chloroform, the heart continued beating, after death; while just the opposite effect occurred in mammals.

Dr. Wilder stated that when turtles and toads were killed with benzine the hearts would beat for several hours, although it, like chloroform, always stops the action of the heart with mammals; in one case a *Chysemys picta* was left for eighteen hours in a jar with an excess of benzine, yet the heart beat for several hours after the animal was opened.

Dr. Wilder also suggested that the depth (2 to 5 inches) of the hole in the turf, in which the toads are often found secreted during the daytime, might be for the sake of protection from the salt spray which must often sweep an unwooded island.

He further remarked upon the absence of any mollusks in the stomachs of those hitherto examined, although multitudes of small Littorinas are left upon the seaweed and among the stones where the Gammaroids occur.

Mr. C. S. Minot presented specimens of stratified sand and other soils from Nashaurna Islands. The remarks called out by this item caused a digression to the subject of glacial scratches upon which Prof. Agassiz made a few suggestions.

Mr. Straight offered a note upon the *Supinator longus* muscle of vertebrates. According to both Meckel and Huxley, this muscle is not found in dogs. Huxley mentioned it with a list of muscles which are generally represented in the vertebrates above fishes and which are well developed in man. Meckel names various of the mammalia in which it is found, but says it is absent in bats, the hyena, dog and some others. In dissecting the muscles of the forearm of a Newfoundland dog, July 19th, his attention was attracted by a peculiar strip of muscular fibre, scarcely three-eighths of an inch in width. In tracing it out to its distal end it was found to terminate in a small tendon, fully one-fourth the length of the entire muscle. Judging from the position of this small muscle Prof. Wilder unhesitatingly pronounced it the rudiment of the muscle known to anatomists as the "Supinator longus." It was so small that it would have been of very little if any use to the dog. It will be of interest to ascertain in what races of dogs this muscle is present, and in what absent, as we must admit it was absent in those dogs examined by Meckel and Huxley.

The President hoped that sometime the club would possess a library of reference and a cabinet for comparison. Prof. Agassiz explained in reply, that by the terms of Mr. Anderson's gift, it was possible to make the library and collections of the Museum at Cambridge, at some time, available to the Anderson School.

Professor Fernald made some interesting statements on the habits of *Crepidula formicata* Lam., upon being irritated.

Miss Shattuck reported the addition of *Betula alba*, var. to the list of the flora of the island.

Is it not a little strange that we should not have in this country a first class zoological garden? The nearest approach is the collection of animals in the Central Park, New York. Between April 1, 1870, and April 1, 1871, there were about 175 animals in this collection; they were placed in a series of buildings which surround the Museum and comprise one for the carnivora, one for the birds and monkeys, open air sheds for the bears, wolves, etc., roomy and open air cages for the eagles, domestic fowls, etc., and an enclosed building for the elephants, camels, and various tropical animals.

Professor Marsh, with a large scientific party from Yale College, left New Haven June 5th to continue his researches in vertebrate fossils in the Rocky Mountain region. A successful trip to the pliocene beds of the Niobrara river has already been made and the party are now exploring the eocene deposits near the Uintah Mountains. They will probably not return east before December.

ANSWERS TO CORRESPONDENTS.

H. W. H., Penn.—The plants sent for examination are as follows: No. 1, *Osmunda regalis* L.; No. 2, *Asplenium pinnatifidum* Nutt.; No. 3, *Melilotus alba* Lam.—R. H. W.

BOOKS RECEIVED.

Report of the Geological Survey of the State of New Hampshire, showing its progress during the year 1872. By C. H. Hitchcock. 8vo, pp. 15. Nashua, 1873.

Proceedings of the Boston Society of Natural History. Vol. xv, Part II. Apr.-Dec., 1872.

Plain Directions for Acquiring the Art of Shooting on the Wing. 12mo, pp. 88. New York, 1873.

Third Annual Report of the Noxious Insects of the State of Illinois. By William LeBaron. 8vo, pp. 73. Springfield, 1873.

Memoirs of the Boston Society of Natural History. Vol. ii, Part II, No. 3. *On the Carboniferous Myriopods preserved in the Sigillarian Stumps of Nova Scotia.* By Samuel H. Scudder. 4to, pp. 9. Boston, 1873.

Carcinologiske Bidrag til Norges Fauna. By G. O. Sars. I. *Monographi over de ved Norges Kyster Forekommende Mysider.* Andet Hefte. 4to, pp. 34. With 3 plates. Christiania, 1872.

Die Pflanzenwelt Norwegens, Ein Betrag zur Natur- und Culturgeschichte Nord-Europas. Von Dr. F. C. Schubeler. 4to, pp. 88. Mit 15 Karten und Illustrationen. Christiania, 1873.

Forekomster af Kise i Visse Skifere i Norge. 4to, pp. 97. Med 3 Plancher og Flere Træsmit af Amund Helland. Christiania, 1873.

The Ancient Vessel found in the Parish of Tune, Norway. 4to, pp. 6. Christiania, 1872.

Cantate ved det Kongelige Norske Frederiks Universitets Mindefest for Hans Majestæt Kong Carl den 19*de November*, 1872. Text af Jorg Moe. 4to, pp. 8. Christiania.

Die Fisch-Cultur Norwegens. Von M. G. Hetting. 8vo, pp. 20. Christiania.

Tale ved Universitets Mindefest for Kong Carl. Af R. Tonder Rissen. 16mo, pp. 16. Kristiania, 1872.

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On the Rise of Land in Scandinavia. 8vo, pp. 17. Christiania, 1872.

Profesorelæsninger til Concurrence om den Medicinische Professorpost. Om Sygdomsprocesser i Hornhinden. Af Jacob Heiberg. pp. 8. *Hornhindebetændelfernes generelle Karakteristik og Klassification fra et klinisk Standpunkt.* Af Johan Hjort. pp. 7. *En Fremstillings af Tegnene, Gangen, Udgangen og Behandlingen af Fractura cranii.* Af Jacob Heiburg. pp. 9. *En Fremstilling af Tegnene, Gangen, Udgangen samt Behandlingen af Fractura cranii.* Af Johan Hjort. pp. 9, 4to. Marts, 1873.

Beretning om den almindige Udstilling for Tromso Stift. 8vo, pp. 162. Kristiania, 1872.

Den Norske Turistforeningo Aarbog for 1869. 8vo, pp. 139. With 3 plates. Christiania.

Om Kurvmager-Arbeide og Straafletning. 8vo, pp. 60. Christiania, 1872.

Stolevæsenets Ordning i Massachusetts. Af Hartvig Rissen. 8vo, pp. 92. Christiania, 1868.

Beretning om Det Kongelige Selskab for Norges Vel, dets Tilstand og Virksomhed i Aaret 1866. 8vo, pp. 131. Christiania, 1867.

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Monthly Report of the Department of Agriculture for July, 1873. 8vo. Washington.

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